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(54) Title: METHODS AND COMPOSITIONS FOR TREATING TISSUE DEFECTS USING PULSED ELECTROMAGNETIC FIELD STIMULUS

(57) Abstract: Methods of enhancing cell proliferation in tissue cultures and at the site of tissue defects in human or other animal subjects, comprising the steps of: (a) culturing a living tissue in a medium to form a tissue culture; (b) subjecting said tissue culture to an electromagnetic field; (c) extracting said medium from said tissue culture; and (d) administering said medium to the site of said tissue defect. Preferably, the tissue culture comprises endothelial cells. The present invention also provides compositions for the treatment of tissue defects in a human or other animal subject, comprising a safe and effective amount of a medium produced by electromagnetic stimulation of a tissue culture. Preferably, the compositions comprise a pharmaceutically acceptable carrier, such as hyaluronic acid, gelatin, collagen, cellulose ether, and osteoconductive carriers.

INTERNATIONAL SEARCH REPORT

International Application No
PCT 03/23146

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 C12N5/00 C12N13/00 A61K35/12

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 C12N A61K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal, MEDLINE, BIOSIS, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No:
X	KIPSHIDZE N ET AL: "Low-power helium: neon laser irradiation enhances production of vascular endothelial growth factor and promotes growth of endothelial cells in vitro." LASERS IN SURGERY AND MEDICINE. UNITED STATES 2001, vol. 28, no. 4, 2001, pages 355-364, XP001091367 ISSN: 0196-8092	6-8
Y	abstract page 356, column 2, paragraph 1 - paragraph 2 page 358, column 1, last paragraph -page 359, column 2, last paragraph page 361, column 2	1,9

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[X] Further documents are listed in the continuation of box C.

[X] Patent family members are listed in annex.

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Date of the actual completion of the international search	Date of mailing of the international search report
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Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL – 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	De Kok, A

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International Application No
PCT 03/23146

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication,where appropriate, of the relevant passages	Relevant to claim No.
X	NICOLSON G L ET AL: "EFFECTS OF GAMMA IRRADIATION ON CULTURED RAT AND MOUSE MICROVESSEL ENDOTHELIAL CELLS METASTATIC TUMOR CELL ADHESION SUBENDOTHELIAL MATRIX DEGRADATION AND SECRETION OF TUMOR CELL GROWTH FACTORS" CLINICAL AND EXPERIMENTAL METASTASIS, vol. 9, no. 5, 1991, pages 457-468, XP001091368 ISSN: 0262-0898 abstract page 460, paragraph 2 page 463, paragraph 1 ---	6,8
Y	WO 99 50391 A (LATOUR NATHALIE ;BARTHOLEYNS JACQUES (FR); IDM IMMUNO DESIGNED MOL) 7 October 1999 (1999-10-07) page 3, line 22 -page 16, line 3	1,9
A	page 19, line 6 -page 20, line 16 ---	6,11,12, 14
A	SPADARO J A: "MECHANICAL AND ELECTRICAL INTERACTIONS IN BONE REMODELING" BIOELECTROMAGNETICS, JOHN WILEY, NEW YORK, NY, US, vol. 18, 1997, pages 193-202, XP000878969 ISSN: 0197-8462 page 197 -page 199 ---	4,5
A	MACIAS M Y ET AL: "DIRECTED AND ENHANCED NEURITE GROWTH WITH PULSED MAGNETIC FIELD STIMULATION" BIOELECTROMAGNETICS, JOHN WILEY, NEW YORK, NY, US, vol. 21, no. 4, May 2000 (2000-05), pages 272-286, XP001080070 ISSN: 0197-8462 abstract page 276, column 2, last paragraph -page 277, column 1 ---	1
A	NINDL G ET AL: "Growth stage dependent effects of electromagnetic fields on DNA synthesis of Jurkat cells" FEBS LETTERS, ELSEVIER SCIENCE PUBLISHERS, AMSTERDAM, NL, vol. 414, no. 3, 15 September 1997 (1997-09-15), pages 501-506, XP004261102 ISSN: 0014-5793 abstract page 504 page 505, column 2, line 2 -----	1

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT 03/23146

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